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ABSTRACT

This paper presents an evaluation of the Teach-A-Tot Children's Center, a demonstration project designed to encourage the development of innovative programs in early childhood education. The evaluation encompassed six areas of program functioning: (1) linguistic, intellectual, and social development; (2) the benefits of full time versus part time attendance; (3) program goals and concomitant activities; (4) identification of medical problems; (5) program costs; and (6) the effect of the program on parent attitudes and the family environment. The children involved in the evaluation at the end of the six month experimental period included 10 children attending the center full time, 18 who attended part time, and 17 control children who were not attending any preschool program. The mean age of the children at the end of the experimental period was approximately 52 months. Results from the evaluation indicated the following: (1) significant post-test differences between the experimental and the control children in linguistic, intellectual, and social development; (2) no significant differences between part time and full time students; (3) the presence of inconsistencies between program goals and teacher behaviors; (4) clear medical benefits for center children; (5) costs per day of $9.01 and $10.53 for part time and full time students, respectively; and (6) subjective but not objective data suggesting the value of the program for the families of the center children. The evaluation suggested overall benefits for the children involved in the program and indicated areas needing improvement or further research. (BD)

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AN EVALUATION OF TEACH A TOT CHILDREN'S CENTER

Lorne Taylor, Ph.D.[1]

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It should be noted that the findings and conclusions reported herein represent the views of the author. They do not necessarily represent the views of either the Board of Directors of Teach-A-Tot, the Staff, or the Department of Health and Welfare.

TEACH-A-TOT CHILDREN'S CENTER: AN EVALUATION

Lorne Taylor

As Teach-A-Tot Children's Center acted as a demonstration project for the year 1974-75 and also as a center for the development of innovative programs, it is essential that the center's effects on the children be evaluated. The present evaluation of the center includes the following aspects.

a) The developmental benefits to the children which include linguistic, intellectual and social development;

b) An examination of the benefits of full versus part-time attendance for children;

c) An examination of the goals of the program and the daily activities that occur to achieve these goals;

d) Identification of correctable medical conditions;

e) Cost analysis. This section will examine the costs and presents a per day figure for day care. (This section of the report was prepared in cooperation with Mr. J.A. Dearness.)

f) The effects day care has on the families involved in terms of both attitudes to the center and effects of the center on the total family environment. (This section of the report was prepared in conjunction with Mrs. Jane Dempster and Mrs. Gwen Rosen.)

a) Developmental Evaluation

Recent years have seen a dramatic expansion in attempts to intervene in the environments of low-socioeconomic children. The basic aim has been to boost their usually lagging cognitive growth rates. In America there have been numerous intervention attempts under the

auspices of Headstart and Title I Kindergartens. In Australia, as well, interest and research in early intervention has blossomed (deLacey, Nurcombe, Taylor and Moffitt, 1973; Taylor, deLacey and Nurcombe, 1974). However, in Canada experimental studies on the effects of a child having participated in a day care center program of one sort or another are rare. The most extensive research in Canada assessing the effects of early enrichment has been carried on by Dr. B. Clark at Dalhousie University (1967, 1969). Other than Clark's two reports and several reports on volunteer centers operated by the National Council of Jewish Women, developmental data are virtually non-existent. The present evaluation provides an opportunity for a detailed investigation regarding the developmental benefits to the children attending the Center. The assessment includes an evaluation of linguistic, intellectual and social development of the children.

This analysis provides a valuable indication as to the educational effects of Teach-A-Tot. It is well known that intelligence level is a good predictor of school success. If the experience of Teach-A-Tot Children's Center increases the level of intellectual functioning in the children, then it will also increase their chance of educational success and thus broaden their educational and vocational opportunities.

Linguistic ability is also a good predictor of school success. As Bernstein (1960) points out there are two general modes of speech that exist in any given language, elaborated and restricted. An elaborated code tends to be highly articulated in both vocabulary and syntax while a restricted code has limited syntactical variation

and a limited vocabulary. Recent investigations by Jones (1972) have shown that the language code of low socioeconomic Newfoundland children is markedly restricted; that is, it is rigid in its syntactical expression and tends to lack descriptive modifiers. This is in contrast to the language of a child who is exposed at an early age to an elaborated style of speech and who learns to associate a relatively large number of verbal labels with their corresponding referents. Further, since an elaborated code tends to draw upon descriptive modifiers, such a child learns to perceive a more articulated environment.

In terms of educational development Bernstein's socio-linguistic theory sheds valuable light upon the nature of school failure in low socioeconomic children. Educators generally consider children with limited verbal ability to have a low capacity for scholastic achievement. Success in primary school demands the utilization of an elaborated linguistic code. It is probable that a large number of children are passed off as virtually uneducable because they have not acquired an appropriate linguistic code.

Language, therefore, is not only an academic problem. It is a central issue, as without a flexible syntax and an adequate vocabulary the speaker is limited in his choice of action. It is hoped that Teach-A-Tot Children's Center will increase the language development of the children, not by replacing the restrictive code but by building on what is presented. By developing language abilities, the child evolves the capacity for success in the present school system.

Socialization also plays an important part in the educational process. It is hoped that by attending Teach-A-Tot the children will

be better prepared socially for the kindergarten class. Overall the development evaluation will provide a valuable assessment of the educational benefits of attendance at Teach-A-Tot.

b) Full Versus Part-Time

Another major issue to be raised regards the question of full versus part-time attendance. This issue must be examined both in terms of the effects on children and on the family. The effects of part vs. full-time attendance on the family will be discussed under Section f. To answer this question a group of children attended Teach-A-Tot only on a part-time basis while another group attended on a full-time basis. By administering the tests described in the Methodology section it will be possible to evaluate the effects of part-time attendance by comparing the scores of part-timers with the scores of children who attend full-time.

c) Interactive Processes

Evaluation of a preschool program has typically employed the classical experimental model. A typical study may report the following finding. "A group of children who participated in a preschool program gained or did not gain in terms of language ability as compared with a group who did not attend the preschool." A recent article by Ryan and Moffitt (1974) points out that although findings such as these are important and need to be reported, a wider scope of evaluation is needed. They suggest that as well as examining the outcomes research should also examine the content of preschool programs. One method of doing this is to analyze the goals of the program and how these goals are reached. This can be accomplished by an independent observer

who observes the activities at the center and records child-teacher interaction. As well, a questionnaire can be administered to the teachers which parallels the observations to discover if activities that the teachers report as highly relevant to a preschool program are activities they stress in the program.

d) Identification of Medical Conditions

Parents with low incomes and low levels of education tend to take their children to a physician only on occasions of either injury or relatively sudden and severe illness. Rarely are such children given general check-ups. Thus, children with sensory deficits (e.g. vision and hearing) go undetected until the child enters school or even later. The same applies to a host of other medical problems, some of which may have severe developmental consequences.

Staff members of day care centers often notice certain symptoms in children that go undetected by parents. In many instances, medical appointments are arranged by the center's staff and sometimes the child is even taken to the physician by a staff member.

One portion of the evaluation will be directed at an attempt to measure the medical conditions detected in children as a consequence of attending the day care center. This will be done through an examination of the center's records as well as from interviews with the teachers.

e) Cost Analysis

In trying to determine whether day care is economically worthwhile or whether part-time or full-time attendance offers the greatest benefits, it is important to consider several factors. The cost

analysis for this evaluation will take into account the costs of full-time versus part-time attendance balanced against the benefit to the child and the family as determined by the child's cognitive, social and medical gains and the family's psychological, sociological, and economic well-being.

f) Effects on Family

The effect on the total family of having a child at Teach-A-Tot was investigated by comparing the 25 families who had one or more children accepted by Teach-A-Tot, with a control group of 19 families whose child or children had not been accepted.

The areas of family life covered by the investigation were as follows:

1. Relationships:
   a) relationship between mother and father
   b) relationship between child and siblings for other children
   c) relationship between parents and grandparents
2. Child rearing practices - such as the child's involvement in the total family life, the parent's interest in Teach-A-Tot itself and the school system, and the parents interest and involvement in the child's world.
3. Maternal standards such as housing and income.

METHODOLOGY

Subjects

The subjects in the experimental group consisted of 10 children who attended Teach-A-Tot full time and 18 children who attended the

Center on a part-time basis. It should be noted that in September the full-time group consisted of 13 individuals. However, due to illness and children leaving the Center only 10 were available for post-testing. A control group of 17 children who did not attend Teach-A-Tot or any other child care facility was tested to enable a comparison between groups who attended the Center and those who did not. Once again it should be noted that in September the control group consisted of 30 children. However, only 17 parents would agree to their children being retested. This was in spite of the fact that $10.00 was offered as an inducement. As well, the researchers offered to make transportation available. The part-time, full-time and control groups were matched for age, language ability, IQ, and behavioral maturity. Table 1 presents the pre-test data for the various samples. There were no significant differences between the groups on any of the measures as tested by an analysis of variance.

Insert Table 1 about here

Tests

Before the children entered the Center in September 1974, they were administered a series of pre-tests to determine their level of functioning at that time. The control group was also tested. The children attending the Center were retested in February 1975 to determine the effects of the Center. The control group was also retested and the scores from the two groups were compared. The following tests and scales were used as pre- and post-tests to assess the effects of either attendance or non-attendance.

Language

To assess the language development that occurs, the Assessment of Children's Language Comprehension Test was utilized. This test was

developed by Foster, et al. (1973) to measure the growth of language abilities in young children.

Intelligence

To assess overall intellectual functioning, the Stanford-Binet (SB) was utilized. This intelligence test is particularly useful for young children. The Peabody Picture Vocabulary Test (PPVT) was used as an estimate of verbal intelligence. As the PPVT requires only a motor response and not a verbal response it is particularly appropriate for use with young children who may not respond verbally to an examiner.

Social Development

As well as the intellectual and linguistic aspects of development, the evaluation will also assess the effects of the day care center on the social development of the children. The Behavioral Maturity Scale (BMS), a teacher rating device, (Kim, 1968) was utilized in this aspect of the assessment. Although Kim originally developed the scale for use with second graders it has been adapted for use with preschoolers as well. The scale measures emotional, social and academic maturity. Research with preschoolers has indicated that both the social and emotional security factors are clear cut factors. However, academic maturity in preschoolers tends to be made up of two factors, the child's ability to work independently and his enjoyment of books. Overall the Behavioral Maturity Scale provides one of the better estimates of a child's maturity in the three areas.

Interactive Processes

To examine the teacher-child interaction and the content of the program the Observational Schedule and Record (OScAR) developed by Medley and Mitzel (1963) was utilized. The OScAR allows for systematic

observation of the behavior of teachers in four main categories: activities, instructional materials, subjects of instruction and teacher-expressive behaviors. The teacher's behavior was observed and recorded on the OScAR by a trained observer. As well as the OScAR a questionnaire was administered to the teachers. The questionnaire is designed to parallel the OScAR and the teachers rate each item on the questionnaire on a 10 point scale in order to indicate the relevance of the particular item to their program. This design allows for correlations to be calculated between the teachers' observed behaviors (from the OScAR) and their problem goals as indicated in their responses to the questionnaire.

Family Effects

All the families, both control and sample, were interviewed in their own homes, as the children began at Teach-A-Tot and again six months later. The interviews were kept as informal as possible, although an interview schedule was used. The interviews were carried out by final year social work students.

RESULTS AND DISCUSSION

The results and discussion relating to the various aspects of the evaluation will be presented in the order that they were presented in the introductory sections.

a) The linguistic, intellectual and social effects of the Center on children.

i) Linguistic effects:

The effects of the Center on the development of children's language can be determined by examining the pre- and post-test scores for the Assessment of Children's Language Comprehension Test. Part A of the test measures core vocabulary development. As can be seen by

examining the pre- and post-test scores presented in Tables 1 and 2,

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Insert Table 2 about here

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some vocabulary development occurred in the full-time, part-time and control groups. An examination of Table 3, which presents the results of "t" tests for the various groups, indicates that the gains made by each of the groups were significant. The vocabulary gains were roughly equivalent in all three groups.

Insert Table 3 about here

Parts B, C, and D of the test measure a child's comprehension of an increasing number of critical elements and the consistency of patterns of words identified in a sequence. An examination of Table 3 indicates that for part B of the test only the children attending the day care center made significant gains in language ability. For parts C and D all three groups made gains. However, the gains made by the children attending the Center were much larger and more highly significant than children in the control group. For instance, on part D of the test the control group's gain was roughly 12 points whereas the part-and full-time children gained 20 and 33 points, respectively. Generally, it is fair to say that attendance at Teach-A-Tot has made important differences in the level of linguistic functioning in children.

ii) Intellectual functioning:

The Stanford-Binet and the Peabody Picture Vocabulary Test were used as measures of intelligence. It is interesting to note that the

PPVT intelligence scores are in all cases lower than the Stanford-Binet scores. This raises important questions as to the use of the PPVT as it was supposedly designed to be appropriate for young children and should provide an estimate of intelligence similar to the Stanford-Binet. In another study (Taylor and Skanes, 1975) in which the PPVT has been correlated with the Wechsler Preschool and Primary Scale of Intelligence, relatively low correlations have been found. Thus the use of the PPVT as a measure of intelligence must be questioned.

In regard to the effects of Teach-A-Tot Children's Center on the development of intelligence the results for the PPVT indicate that neither the part-time, full-time nor the control group made any significant gains. However, on the Stanford-Binet, which is a more complete and accurate measure of intelligence, all three groups made significant gains. As with language development, children who attended the Center made larger and more significant gains in the level of intellectual functioning than those who did not. The part- and full-time groups gained 13 and 18 points respectively, while the control group gained only 9 points. The gain made by the full-time children is especially important. On the pre-test they were functioning below the normal range of intellectual development. After only six months in the program they were functioning near the top of the normal range. In other words, they have progressed from children who would have great difficulty in school to a level of functioning where they would be able to handle school work, much as any "average" child. Thus it can be concluded that Teach-A-Tot Children's Center has had an important effect on the level of intellectual functioning in children.

iii) Social effects:

The Behavioral Maturity Scale was used to measure the social-

ization effects of Teach-A-Tot on children. This scale provides three measures of maturity: academic maturity, social maturity, and emotional maturity. Since the teachers must observe and rate children over a period of time in each of the three areas it was not possible to rate the control group on the BMS. The results deal with only full-time and part-time children. The means and standard deviations are presented in Tables 1 and 2. Table 3 presents the "t" tests for the pre- and post-measure results. It is clear that the children made significant gains in maturity. Only the full-time children did not gain significantly in social maturity. Both groups made significant gains in the area of academic maturity. As academic maturity represents children's interests in book-related material, the children are better prepared for school than when they first entered Teach-A-Tot. The part-time group made significant gains in social maturity which indicates that they can generally socialize with other children more effectively. Although the full-time group also made gains in social maturity they were not significant. Both groups made significant gains in emotional maturity which indicates that they have become more self-controlled and self-directed. These results suggest that the children should be better able to adapt to the school environment after having attended Teach-A-Tot. This is particularly important for low socio-economic children. Many times these children are not successful in school, not because of any lack of ability but because they lack behavior patterns necessary for school success. It is clear that attendance at Teach-A-Tot provides them with behavior patterns appropriate to school success.

The Benefits of Full- versus Part-Time

Table 4 presents "t" test results of post-measures for children

attending the Center on a part- and full-time basis. As there were no significant differences between the groups initially, any differences that were discovered on the post-test may be related to part- or full-time

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Insert Table 4 about here

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attendance. As shown in Table 4 there are only two measures , the PPVT and the Emotional Maturity Scale, on which there are significant differences. These differences favor the children who attended the part-time sessions. However, in both cases the part-time group scored considerably higher than the full-time group on the pre-measures as well. Overall it can be concluded that part-time attendance is equally as beneficial as full-time attendance in terms of intellectual, social and linguistic development. However, it should be noted that on several of the measures on which there were large differences favoring the part-time group on the pre-test data these differences have been decreased somewhat on the post-test measures.

c) Interactive Processes

The results presented in this section relate to the activities that occur daily at Teach-A-Tot. The teachers were administered a questionnaire covering the following five areas: goals of the program, program activities, subject areas, teacher-expressive behavior, and materials used. The first aspect of this part of the evaluation was to discover if there was general agreement among teachers regarding the relevance of these five areas. Correlation coefficients were calculated between the seven teachers that responded to the questionnaire. The results for the goals section are presented in Table 5. By an examination

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Insert Table 5 about here

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of the correlations in Table 5 it is clear that the teachers generally do not agree with the importance of various goals for their programs. Only 11 of the possible 21 correlations are significant. In fact the negative correlations of teacher 2 with the others indicates that she has strong opposing opinions as to the importance of the various program goals. This raises an important question as to the effectiveness of any programs. It is the author's opinion that if preschool programs are to be successful the teachers involved in the program should be aware of the goals of the program. In the present case the teachers appear to have a relatively individualistic interpretation of what constitutes an important goal. This indicates a need for teachers and supervisors to conduct staff development sessions in which they can discuss goals of the program among themselves. This should lead to a clarification and understanding of goals and the relative importance of the goals. With all teachers working toward common goals the Center may become a more effective and efficient learning situation bringing about greater positive changes in the children.

Teachers were also asked to rate the relevance of various child and teacher activities. The correlations are presented in Table 6.

Insert Table 6 about here

All but five of the correlations are significant. Teacher 4 accounted

for 3 of the 5 non-significant correlations. This indicates that, excluding teacher 4, there is relatively high agreement on the importance of various activities conducted in the Center. As indicated in Table 7 there is also agreement among teachers in regard to the various subject areas which are important. Of the 21 possible correlations only 5 are

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Insert Table 7 about here

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not significant. Of the 5 teachers, teacher 5 accounts for 3 of the non-significant correlations. In these two areas, activities and subject matter, there is considerable agreement among the teachers regarding the importance of these areas for the program.

Table 8 presents the correlations among teachers on the importance of various types of teacher-expressive behavior such as supporting or reproving children. Of the possible 21 correlations only 7 are significant. It can be concluded that there is little agreement among teachers regarding important aspects of teacher expressive behavior. The final area surveyed was the materials teachers used in their daily activities. Table 9 presents the correlations of teachers' ratings relating to the materials utilized to attain program goals. Of the 21

Insert Tables 8 & 9 about here

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possible correlations only 9 are significant. The teachers tend not to agree on the type of materials necessary to achieve the goals of the program. The fact that teachers are not in agreement on teacher expressive behavior or materials used can probably be related to the

fact that there is little agreement among the teachers regarding the goals of the program. If the teachers were in agreement regarding goals then it is more likely that they could agree on how to achieve the goals. These results indicate that there is a definite need for professional development seminars in which teachers can discuss and become more aware of the goals of the Center and how to achieve these goals.

The research also included an observation of each teacher's behavior as they interacted with the children at the Center. The observations cover the following areas, corresponding to the questionnaire administered to the teachers, materials, teacher expressive behavior, subjects and activities. As a result it was possible to correlate the teachers' responses on the questionnaire to their observed behavior in the classroom. These correlations are presented in Table 10.

Insert Table 10 about here

The correlations for materials utilized, with what the teachers report as being relevant to their program goals are, except for two teachers, not significant. This indicates materials which teachers report as relevant for their program are not the materials that they were observed using. Similar findings are reported for teacher-expressive behavior and activities. That is to say that what the teachers rated as important teacher expressive behaviors and activities were not in fact the expressive behaviors or activities that were observed in the classroom except for three teachers. In the subject areas, 4 of 7 teachers were found to have significant correlations between what they report as relevant to their program and their observed behavior in the

Center. Overall the non-significant correlations are due to the large discrepancies which exist between the parallel observational and questionnaire data. These findings raise important questions as to why teachers generally do not carry out various behaviors they rate as relevant to the achievement of the program goals. Are the behaviors teachers rate as relevant in fact important to the program? Does the Center in some way inhibit teachers and the behavior they see as important? Presumably the Center should strive to bring about a greater correspondence between teachers' behavior and activities and goals of the program. In-service workshops are one way to effectively improve the conceptual understanding of goals as well as methods to achieve the goals.

d) Identification of Correctable Medical Conditions

The Teach-A-Tot Center has as one of its employees a Public Health Nurse who works in the Center on a part-time basis. A number of medical conditions were identified by her. Once it was clear that a child had a medical problem the nurse either took the child to a doctor herself or had the parents take the child to a doctor. It should be stressed that the medical problems were brought to the parents' attention by the nurse. Had it not been for her examination of children, any of the following conditions may have gone undiagnosed as the parents appeared to be unaware that a problem existed. Following is a list of medical conditions identified from September 1974 to March 1975. One case each of the following communicable diseases was found: chicken pox, scarlet fever, whooping cough, scabies, ring worm, Pediculosis (head lice), and two cases of German measles. Other illnesses identified were eight cases of Otitis media (ear infection), four cases of pneumonia, one case of bronchitis and five cases of upper respiratory infection. As well, one

urinary tract infection was diagnosed. Further, the medical screening identified a number of other problems. One child had a gross tremor in both hands and is presently being investigated by a specialist. A total of five other children were identified as having speech problems and are presently being seen on a weekly basis by a speech therapist. Two children were referred for visual problems and 15 children were referred to either a dental clinic or dentist with dental problems. Overall the importance of medical screening is clear. These problems were not identified by parents and probably would have gone unnoticed by them. This may be so, especially in children who have speech problems. The earlier these problems are identified the more likely it is that remediation can be successful. The medical evaluation has also led to the nurse visiting several families on a regular basis to deal not only with the child attending the Center but also with other siblings, especially younger ones. Overall the medical evaluation has proven to be especially worthwhile in the early identification of problems.

Cost Analysis

The purpose of this analysis is to analyze the per capita cost for the instruction and care of children at the Teach-A-Tot Day Care Center in St. John's. Teach-A-Tot supplies services to 50 children in two categories--25 who are considered to attend full-time, and 25 part-time, in the mornings. The Center is open from 8 a.m. to 6 p.m. daily, to accommodate various drop-off and pick-up times.

The period for which the analysis has been made is from September 1, 1974 to February 28, 1974, and all relevant operational expenses for this time have been incorporated. There were 110 days' services supplied. In one cost category, Equipment (fixed assets),

expenditures were considered as well from July and August, 1974. The per capita cost is based on the full attendance of each child.

The accuracy of the assessment has been limited by one major factor: no exact separation of costs directly to each category of child can be made. As a result, it has been assumed that costs vary according to the attendance of full-time or part-time children, a proportion has been estimated for each category.

Method of Analysis

Costs were initially summarized for the February-September period according to the classifications listed in the proposed budget for the Teach-A-Tot project. This showed a total overall cost of operations and is presented in Table 11.

Insert Table 11 about here

The cost amounts were reclassified according to type of cost: operating costs, non-recurring costs, fixed assets: equipment. This is shown in Table 12.

Insert Table 12 about here

Since an objective of the study was to provide a basis for per diem projections for future operations, the non-recurring costs, consisting of evaluation costs, were ignored thereafter.

The final per capita per diem figure is one of two alternatives, depending on the possible inclusion of the costs of the fixed assets. In the first instance, such costs are excluded. In the second, a daily

per capita cost was calculated on the basis of amortization over a three-year period, the rate for items in the relevant classes.

Analysis

The costs established are as shown in Table 13.

Insert Table 13 about here

Costs which were assumed to be fixed, not dependent on the number or category (full-time or part-time) of children, were office expenses and staff training. Transportation was determined to be the same for both categories and thus was not divided.

Salaries were also allocated according to support staff (Program Director, Office Manager, Nurse, Maintenance Man, Cook, and Food Manager) and child-care workers (full-time and part-time). The support staff was designated as a fixed expense of operation. and the full- and part-time child-care workers assigned to the appropriate category.

Sanitary supplies and school supplies were apportioned as 60% to full-time attendees and 40% to part-time.

Food was allocated as follows: From a division of total food costs in the period September-December (inclusive) by the total number of snacks (no lunches were served), a per snack cost of 16¢ was calculated. This cost was applied to the total snacks in the January-February period, and the remainder was apportioned to give a per meal cost of 77¢.

Conclusions

The daily cost for full-time pupils was estimated to be $10.53;

for part-time $9.01. To each of these may be added an allocation for capital costs of $0.18. These results are presented in Table 14.

Insert Table 14 about here

On the basis of this information and the other information presented in this report a judgement can be made as to which type of day care, part- or full-time is most appropriate for families. The conclusions drawn here represent only the opinion of the author. As discussed previously there is little to favor full- over part-time attendance in terms of the developmental benefits to children. As well there appears to be little difference in the effects full- or part-time attendance has on families. It should be noted that the author is of the opinion that the questionnaire administered to families may have not been sensitive enough to identify certain differences in the effects of part- and full-time attendance on families. However, since it is on objective evidence that conclusions must be drawn it appears on the basis of the evidence presented that part-time attendance is equally beneficial in all aspects covered in the present evaluation.

Effects on the Family

There were no measurable, significant differences between the control and experimental groups - either at the time of the initial interview or six months later. This is in part because the type of data collected does not lend itself easily to statistical analysis, but also because of the small number in each group, particularly the control group.

However, the interview with both control and sample group parents

found day care to be a useful and beneficial concept. Further the interviews indicated that although day care primarily benefited the child, it also had beneficial effects to others in the family. There were three main areas where the interviews showed Teach-A-Tot to have been of particular use to the child attending. Firstly, Teach-A-Tot had been a place where the shy, nervous child could get some idea of being away from mother and home for a while, and therefore make transition into the school system less traumatic; secondly, Teach-A-Tot had enabled some children with specific problems, such as speech problems, to obtain remedial treatment; and thirdly, mothers commented that attendance at Teach-A-Tot had made advances in their child's ability to relate to other children and to share.

At the time of the follow-up interview, all parents in the sample group, except one, felt that the benefits they had anticipated at the initial interview were in fact being experienced. All the mothers commented that the care the children received at Teach-A-Tot was of a high standard, and the day care programme at Teach-A-Tot was stimulating and creative. One mother explained that "...now Jason is at Teach-A-Tot he comes home with lots of things to tell me and his father. It seems to have made quite a difference. My husband is far more interested in Jason now-a-days."

As the enthusiasm for Teach-A-Tot was very apparent, the resulting disappointment when a place could not be offered to a child, was equally apparent. Even at the time of the follow-up interview, the majority of mothers in the control group still expressed feelings of disappointment that their child had not been able to attend Teach-A-Tot. Two mothers had made alternative child care arrangements with

baby sitters, but both felt that this arrangement was second to Teach-A-Tot.

The major effects on the family of having a child at Teach-A-Tot can be summarized as follows:

a) The mother is able to return to work. In one family, the mother was the sole support for her two children and her invalid mother, and therefore the return of full-time nursing meant a noticeable improvement in the family's financial status, and in the mother's emotional well-being. Two mothers had returned to college to finish professional training - training which had been interrupted by the birth of children, and another mother was back at work thereby enabling her husband to complete his University degree.

b) Mothers found that they had some "time to themselves". Over all the sample mothers commented that they really valued this time and felt that they were refreshed and able to cope better because of this "free time". In most cases this time was a welcome and appreciated gain, but for two mothers, it was vital. These women needed time to rest after major illnesses. They felt that the time they had free of the demands of a toddler was aiding considerably in the recovery process.

c) Nearly all the mothers in the sample group felt that the child at Teach-A-Tot had learned how to share, and relate better to other children. The gain in this instance is primarily that of the child, but because the child was functioning better in a group setting at Teach-A-Tot, he also functioned better in the family group and therefore the benefits were picked up by all family members.

The overall impression from the study was that those parents

who had a child at Teach-A-Tot felt the experience was worthwhile and stimulating both for the child and the parents. For the parents in the control group the overall impression was one of disappointment and a feeling that their child had missed out on a good opportunity.

The majority of mothers in the sample group, and nearly half the mothers in the control group were thinking about putting in an application for younger children in the family to attend Teach-A-Tot.

The beneficial effects on the total family of having a child at Teach-A-Tot - at least from our investigations - are not quantifiable and easily demonstrated. They are more in the areas of how people felt, such as feelings of being "more relaxed", "coping", of "more comfortable", because they were sure their children were receiving good care. The mother who said that she was "...blooming" because she was able to return to work knowing her children were secure and well cared for, was a typical response.

Perhaps any future study would look in more depth at these more or less intangible benefits - particularly any changes in the stress systems of the family. Perhaps also, rather than looking at one day care center, a larger study could be coordinated.

SUMMARY AND CONCLUSIONS

The Teach-A-Tot Day Care Center has had significant positive effects on the linguistic, intellectual and social development of children. This has been indicated by a comparison of children who attended the Center and a comparable group who did not.

Part-time attendance appears to be equally as beneficial as full-time attendance in terms of benefits to both children and families.

It was expected that the benefits to the family of full-time attendance would be relatively important. However, this does not appear to be the case. More research and better instrumentation is necessary to validate this finding.

It is clear from both observations of teachers and their responses to a questionnaire that there is a definite need for professional development. If only the developmental evaluation had been conducted there would be little basis for suggestion for change. However, the descriptive data provided by this aspect of the research shows inconsistencies in goals and teacher behavior and indicates a clear need for teacher education. With a more integrated approach to the program by teachers it is likely that the gains reported in the present research could be magnified.

The medical benefits to the children attending the Center are clear. Many conditions which may have developed into serious problems were identified and treated. Had the children not been attending the Center many problems would have gone unidentified.

The basic cost per day per child is $9.01 and $10.53 for part- and full-time, respectively. In terms of the benefits the children gain and with the possibility of the Center for even greater positive change, these costs are not extreme nor are they incongruent with costs in the rest of Canada.

The results of the evaluation of the Center's effects on families was the most disappointing. The nature of the questionnaire administered did not provide data that could be analyzed objectively. However, the subjective impressions of the parents indicate that Teach-A-Tot was a valuable experience. In future research this area must

be analyzed in more detail.

Overall, then, the research has indicated the beneficial effects of day care on children. It has also indicated areas where improvement can be made to make Teach-A-Tot a more effective learning environment. As well, areas where there needs to be more research, and improvement of research, instruments have also been suggested.

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TABLE 1

Means and Standard Deviations for Full-Time, Part-Time and Control Group Children on the Pre-measures (September 1974)

Variable	Full-Time		Part-Time		Control Group	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
Age (in months)	45.60	6.7	46.86	5.47	45.00	8.14
Stanford Binet IQ	88.75	20.89	99.50	15.88	102.31	17.89
Peabody Picture Vocabulary Test	82.80	13.40	96.50	15.14	94.93	14.10
Assessment of Children's Language Scale (A)	38.40	8.4	42.39	5.66	40.69	7.37
Assessment of Children's Language Scale (B)	80.00	18.97	86.67	17.00	83.75	14.52
Assessment of Children's Language Scale (C)	58.00	19.39	71.18	18.75	73.13	26.86
Assessment of Children's Language Scale (D)	40.00	20.98	66.47	23.25	64.63	25.36
Behavioral Maturity Scale (Academic)	16.25	4.05	19.59	5.72	not available	
Behavioral Maturity Scale (Social)	17.75	2.77	18.35	4.82	for control	
Behavioral Maturity Scale (Emotional)	16.00	6.32	20.47	4.66	group	

Table 2

Means and Standard Deviations for the Full-Time, Part-Time and Control Group Children on the Post-measures (March 1975)

Variable	Full-Time		Part-Time		Control Group	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
Stanford-Binet IQ	106.18	16.39	111.41	13.48	109.19	19.58
Peabody Picture Vocabulary Test	85.10	17.15	101.39	16.56	97.50	15.39
Assessment of Children's Language Scale (A)	44.50	6.15	46.39	2.87	44.56	4.38
Assessment of Children's Language Scale (B)	91.00	15.78	96.11	4.88	87.50	16.01
Assessment of Children's Language Scale (C)	79.00	26.25	92.22	8.54	83.75	18.33
Assessment of Children's Language Scale (D)	73.00	30.35	86.11	12.97	76.77	20.53
Behavioral Maturity Scale (Academic)	20.70	5.1	24.33	5.48	not available	
Behavioral Maturity Scale (Social)	18.40	4.27	21.77	3.95	for control	
Behavioral Maturity Scale (Emotional)	20.5	3.23	24.61	5.49	group	

TABLE 3

t-Tests for Pre- and Post- Tests for Each Group

Variable	Part Time New t	Full Time New t	Control t
1. Stanford-Binet IQ	4.581***	5.422**	2.535*
2. PPVT Scale	1.574	0.992	1.050
3. ACIC (A)	3.773**	4.376**	3.316**
4. ACIC (B)	2.521*	2.905*	1.567
5. ACIC (C)	5.383***	4.583	2.221*
6. ACIC (D)	4.052***	6.983***	3.806**
7. BMS (Academic)	3.02**	4.51**	
8. BMS (Social)	2.55*	1.38	
9. BMS (Emotional)	3.71**	2.22*	

*p<.05

**p<.01

***p<.001

TABLE 4

t-Tests - Full Time vs Part Time on Post Measures

Variable	t
1. Stanford-Binet IQ	0.74
2. PPVT IQ	2.37*
3. ACLC (A)	1.07
4. ACLC (B)	1.22
5. ACLC (C)	1.89
6. ACLC (D)	1.53
7. BMS (Academic)	1.66
8. BMS (Social)	2.03
9. BMS (Emotional)	2.47*

$p \leq .05$

TABLE 5

Correlations for Teachers' Ratings of Goals

Teacher	1	2	3	4	5	6	7
1	1.00						
2	0.008	1.00					
3	0.43*	0.44*	1.00				
4	0.56*	-0.16	0.48*	1.00			
5	0.33*	-0.44	0.04	0.10	1.00		
6	0.53*	0.12	0.45*	0.47*	6.35*	1.00	
7	0.26	-0.18	0.43*	0.15	0.57*	0.24	1.00

*$p<0.05$

TABLE 6

Correlations for Teachers' Ratings of Activities

Teacher	1	2	3	4	5	6	7
1	1.00						
2	0.56*	1.00					
3	0.38*	0.63*	1.00				
4	0.14	0.18	0.08	1.00			
5	0.57*	0.80*	0.51*	0.41*	1.00		
6	0.41*	0.36*	0.20	0.49*	0.41*	1.00	
7	0.11	0.51*	0.34*	0.56*	0.55*	0.53*	1.00

*p<.05

TABLE 7

Correlations of Teachers' Ratings for Subject Areas

Teacher	1	2	3	4	5	6	7
1	1.00						
2	0.76*	1.00					
3	0.56*	0.75*	1.00				
4	0.74*	0.99*	0.77*	1.00			
5	0.37	0.36	0.63*	0.42	1.00		
6	0.60*	0.47*	0.37	0.50*	0.67*	1.00	
7	0.75*	0.76*	0.49*	0.75*	0.32	0.78*	1.00

*$p < .05$

TABLE 8

Correlations of Teachers' Ratings for Teacher Expressive Behavior

Teacher	1	2	3	4	5	6	7
1	1.00						
2	0.41	1.00					
3	0.50*	0.93*	1.00				
4	0.27	0.26	0.32	1.00			
5	0.17	0.80*	0.56*	0.14	1.00		
6	0.43	0.41	0.38	-0.15	0.26	1.00	
7	0.69*	0.51*	0.55*	0.22	0.25	0.27	1.00

*$p < .05$

TABLE 9

Correlations of Teachers' Ratings for Materials used to Achieve Program Goals

Teacher	1	2	3	4	5	6	7
1	1.00						
2	0.51*	1.00					
3	0.20	0.64*	1.00				
4	0.62*	-0.19	-0.22	1.00			
5	0.60*	0.72*	0.35	0.13	1.00		
6	0.72*	0.42	0.24	0.32	0.27	1.00	
7	0.50*	0.49*	0.64*	0.09	0.11	0.82	1.00

*p<.05

TABLE 10

Correlations Between What Teachers Report as Relevant for Their Program With What Was Observed Through the Use of the OSCAR

Teacher	Materials	Teacher-Expressive Behavior	Subjects	Activities
1	0.21	0.08	0.54*	0.42*
2	0.19	0.92*	0.64*	0.27
3	0.29	0.62*	0.35	0.21
4	0.00	0.26	0.53*	-0.02
5	0.50*	0.00	0.46	0.24
6	0.54*	0.33	0.76*	0.26
7	0.00	0.35	0.87	-0.06

*$p<0.05$

TABLE 11

Summary of Expenditures[1] - September 1974 to February 1975

1. Project Personnel: salaries (excluding van driver)			$35,827.40
2. Transportation (includes van driver's salary)			7,185.37
3. Office expenses			
a) office supplies		$746.25	
b) office equipment (small items)		92.93	
c) advertising		50.32	
d) telephone		196.83	
e) rent (includes insurance)		2,459.92	3,546.25
4. Other expenses			
a) Food and sanitary supplies			
i) food	$2,542.48		
ii) sanitary supplies	2,003.76		
iii) equipment[2]	782.62	5,328.86	
b) Educational equipment[2]		3,125.51	
c) Kitchen equipment[2]		1,101.54	
d) Physical equipment[2]		948.72	
e) School supplies		1,246.24	
f) Proposed evaluation costs[2]		5,000.00	
g) Staff training		1,380.05	18,130.92
			$64,689.94

NOTES:

[1] listed by title of project's budget submission (n.d.)

[2] includes purchases since July 1974

TABLE 12

Summary of Expenditures by Type of Cost

September 1974 - February 1975

Operating Cost	
Salaries (excluding van driver)	$35,827.40
Office Expenses	3,546.25
Sanitary Supplies	2,003.76
Food	2,542.48
School Supplies	1,246.24
Staff Training	1,380.05
Transportation	7,185.37
	53,731.55
Non-recurring Costs	
Evaluation Costs	5,000.00
Fixed Assets: Equipment	
Educational	3,125.51
Kitchen	1,101.54
Physical	948.72
Sanitary	782.62
	5,958.32
	$64,689.94

TABLE 13

Allocation of Fixed and Variable Costs (excluding Capital Costs)

September 1974 - February 1975

	Fixed: All Children (A)	Variable: Full-time (B)	Variable: Part-time (C)	Total
Salaries	$15,810.95	$11,015.16	$ 9,001.29	$35,827.40
Office Expenses	3,546.25			3,546.25
Staff Training	1,380.05			1,380.05
Transportation	7,185.37			7,185.37
Sanitary Supplies		1,202.26	801.50	2,003.76
School Supplies		747.74	498.50	1,246.24
Food		2,032.08	510.40	2,542.48
TOTALS	$27,922.62	$14,997.24	$10,811.69	$53,731.55

TABLE 14

Teach-A-Tot: September 1974 - February 1975

Daily Per Capita Cost (Excluding Capital Costs)

Full-time pupils

Col. A + B (Table 3) — 25 pupils — 110 days = $10.53

Part-time pupils

Col. A + C (Table 3) — 25 pupils — 110 days = 9.01

Capital Costs (Fixed Assets)

(3 year amortization)

Total costs (July 1974 - February 1975) 5,958.39

Daily per capita $0.18

Daily Per Capita Cost (Including Capital Costs)

Full-time pupils	$10.71
Part-time pupils	9.19

QUESTIONNAIRE ADMINISTERED TO TEACHERS

A. PROGRAMME GOALS

The following is a list of possible programme goals, some of which are likely to be more relevant to your programme than others. We would like to know how relevant each is to the aims of your programme, and we hope that the suggested rating scale allows you the scope and freedom to make these decisions.

RATING SCALE

Irrelevant — Highly Relevant

1 2 3 4 5 6 7 8 9 10

RATING

____ 1. To provide an educational environment where the child can develop physically, mentally, socially and emotionally through experiences at work and play.

____ 2. To prevent the progressive retardation observed in disadvantaged children.

____ 3. To promote the child's cognitive development.

____ 4. To provide a warm and stable emotional environment.

____ 5. To equip the children with the skills necessary for adequate functioning in future academic experiences.

____ 6. To instill in the children feelings of confidence in the learning situation.

____ 7. To help the child develop a sense of personal worth.

____ 8. To help the child develop a sense of security within the preschool group.

____ 9. To help the child accept differences in others.

____ 10. To help the child learn through sharing experiences with other children.

____ 11. To help the child learn to trust adults.

____ 12. To teach the child to help himself.

____ 13. To help the child to learn to expect limits and accept them.

____ 14. To help the child develop consideration for others.

____ 15. To help the child to understand honesty.

____ 16. To encourage the child to try out new activities and experiences.

____ 17. To promote the development of social skills.

___ 18. To help the child learn to share and take turns.

___ 19. To help the child recognize ownership.

___ 20. To provide the means for discovery and creativity with a minimum amount of interference or instruction from the teachers.

___ 21. To provide materials for creative activity, tactile experiences.

___ 22. To promote the advancement of language skills.

___ 23. To prepare the children for the kinds of instruction and vocabulary to be used by the public school teacher.

24. To promote specific abilities, such as

___ Recognizing and naming colours

___ " " " shapes

___ " " " body parts

___ " " " quantitative and qualitative opposites (e.g. empty/full, right/left)

___ Recognizing equal quantities

___ Grouping objects according to common attributes

___ Counting

___ Understanding physical dimensions, e.g. weight, height, etc.

___ Hand-eye coordination

___ Large muscle coordination

There are many other conceivable goals. We would like to know of any which are relevant to your programme which we have omitted, and their degree of relevance.

___

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B. PROGRAMME ACTIVITIES

The following is a list of teacher and child activities which may be relevant to the accomplishment of your programme goals. Could you indicate how relevant each activity is to the attainment of your goals.

____ 1. Opportunities for the children to engage in freely chosen, non-directed play.

____ 2. Opportunities for the children to share and take turns.

____ 3. Opportunities for the children to observe and mix with their peers.

____ 4. Opportunities to engage in activities such as painting, cutting and pasting, and clay-modelling.

____ 5. Opportunities to engage in table top activities, such as puzzles, beading, sorting.

____ 6. Opportunities to play out and understand social roles and relationships in the family through a housekeeping-play area.

____ 7. Opportunities for the teacher and individual children to interact.

____ 8. Opportunities for small group activities with the teacher.

____ 9. Activities stressing visual activity and discrimination.

____ 10. The teacher stimulating verbal interaction with the children.

____ 11. The teacher encouraging verbal interaction among the children.

____ 12. The children working at a desk or table.

____ 13. The children engaging in dramatic play activities.

____ 14. Opportunities for the children to improve dressing skills.

____ 15. Opportunities for the children to engage in musical activities (e.g. singing, rhythm training and playing instruments)

____ 16. Opportunities for social interaction.

____ 17. Teaching alphabet and word recognition.

____ 18. Activities enriching the children's vocabulary.

____ 19. Reading or telling a story to the children.

____ 20. Opportunities for the children to look at books.

____ 21. Showing films or slides.

____ 22. Playing records.

____ 23. Opportunities to engage in physical activiti[es] [pro]mote large muscle coordination.

____ 24. Opportunities for outdoor play which allow [for] behaviour which must be kept under control indoors.

____ 25. Field trips.

Snack Time

____ 26. Giving the children a nutritional supplement.

____ 27. Teaching acceptable eating and drinking beha[viour]

____ 28. Learning to take turns in serving others.

Bathroom Routine

____ 29. Giving the opportunity to see and discuss sex[uality] [ce]s.

____ 30. Teaching toilet routine.

____ 31. Teaching handwashing after toileting.

If we have omitted any activities which are relev[ant] [go]als, could you please list them, indicating their degree of rel[evance]

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C. MATERIALS

The following is a list of materials which might be used in the preschool situation. Could you please rate each of these materials on its relevance to your programme goals.

____ 1. Materials for demonstration purposes, e.g. blackboard, maps, charts.

____ 2. Child-sized furniture.

____ 3. Blocks and construction toys.

____ 4. Table top materials (e.g. puzzles, beads, buttons etc.)

____ 5. Educational materials/toys, i.e. teaching number, shape, size concept etc.

____ 6. Dress-up clothes.

____ 7. Arts and craft equipment.

____ 8. Large indoor equipment for physical exercise.

____ 9. Special teaching aids for alphabet training.

____ 10. Musical instruments for rhythm training, singing, dancing and body movements.

____ 11. Record player.

____ 12. Nature study material.

____ 13. Reading materials, story books.

____ 14. Films and slides.

____ 15. Outdoor play equipment, i.e. climber, wagons, etc.

Could you list and rate any other materials that are relevant to your programme that we have not mentioned.

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D. TEACHER-EXPRESSIVE BEHAVIOUR

In addition to activity-related behaviour, the teacher in a preschool often engages in expressive relationships with the children. How relevant are the following kinds of behaviours in promoting the best climate for attaining your programme goals.

___ 1. Making supportive comments to the child.

___ 2. Making directive remarks (e.g. "It's time to tidy up now")

___ 3. Expecting the child to recognize authority by following directions.

___ 4. Disciplining a child.

___ 5. Making reproving comments.

___ 6. Setting up problems for the children to solve.

___ 7. Encouraging conversation between teacher and children.

___ 8. Promoting curiosity in the children.

___ 9. Teacher and children developing trusting, mutually respectful relationships.

___ 10. Encouraging and rewarding good behaviour.

___ 11. Knowing the child well enough to channel his energy into areas where he personally needs experience and practice.

___ 12. Being ready to admire the child's work and encourage efforts.

___ 13. Stimulating interest in many different activities.

___ 14. Being a friend to the child by showing sincere affection and comfort when appropriate.

___ 15. Being ready to offer a parental kind of physical warmth and contact.

Could you list and rate any additional teacher-expressive behaviours which you feel are relevant to the attainment of your goals.

___

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E. SUBJECT AREAS

The following is a list of general subject areas which might be relevant to the attainment of a preschool programme. Could you indicate how relevant they are to your programme, and list and rate any other subject areas which might be relevant.

____ 1. Pre-reading, reading exercises.

____ 2. Story-telling to the children.

____ 3. Language development.

____ 4. Social studies.

____ 5. Science.

____ 6. Physical exercise.

____ 7. Music.

____ 8. Arithmetic.

____ 9. Social behaviour.

10. Games

____ Structured games, e.g. team participation, hide and seek

____ Unstructured games, i.e. non-directed free-play.

____ Instructional games, i.e. group word games, number games

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